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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,956	12/17/2001	Frank William Schadewald JR.	STL 10019.00 (30874.113US)	1979
23552	7590	04/07/2003	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CHEN, TIANJIE	
		ART UNIT	PAPER NUMBER	
		2652	7	
DATE MAILED: 04/07/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/021,956	SCHADEWALD ET AL.
	Examiner Tianjie Chen	Art Unit 2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4,7-10,18 and 19 is/are rejected.
- 7) Claim(s) 5,6 and 20 is/are objected to.
- 8) Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

Non-Final Rejection

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-10 and 18-20 in Paper No. 6 filed on 03/11/2003 is acknowledged. The traversal is on the ground(s) that claims 1-20 are pending instead of claims 1-18 are pending as stated in the previous Office Action Summary. This is found true and claims 1-20 are pending.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-10, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Johansen (US 5,963,415).

With regard to claim 1, Johansen shows an electrostatic discharge protection device 30 in Fig. 2 for protecting a head (Column 4, lines 40-42) gimbal assembly circuit 16 (Column 4, line 63) from electrostatic discharge (Column 4, lines 55-56), the device including: a housing 31 (Fig. 3; column 4, line 57); and a shunt 50 positioned within the housing 31, the shunt 50 including a pair of electrical contacts 56 (Column 5, lines 47), the shunt having a first position (Fig. 4) in which the electrical contacts are in electrical communication with the circuit 16 and a second position (Fig. 2) in which the electrical contacts are not in electrical communication with the circuit; wherein the shunt can be reversibly moved between the first position and the second position (Column 6, lines 7-44).

Art Unit: 2652

With regard to claim 2, Johansen further shows that the device can be used in a head gimbal assembly testing apparatus (Column 6, lines 7-44).

With regard to claim 7, Johansen further shows a deshunting pin 72 (Fig. 4; column 6, lines 32-44) that is reversibly moveable from a shunted position in which the pair of electrical contacts are in electrical communication with the circuit to an unshunted position in which the pair of electrical contacts are not in electrical communication with the circuit.

With regard to claims 8 and 9; Johansen further shows that the shunt is configured to protect a head gimbal assembly and the shunt provides a limited resistance between the electrical contacts that are in electrical communication with the head gimbal assembly's reader/writer circuit (Column 1, lines 18-19).

With regard to claim 10, Johansen further shows that the housing is configured to snap onto a printed circuit board (Column 5, lines 5-13).

With regard to claims 18 and 19, Johansen shows a protection device as described above, which includes: means for electrically communicating with a circuit to be protected; and means for reversibly shorting a portion of the circuit to be protected; a pair of electrical contacts that are moveable from a first position in which the electrical contacts are in electrical communication with the circuit to be protected to a second position in which the electrical contacts are not in electrical communication with the circuit to be protected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

Art Unit: 2652

matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen in view of Cheung et al (US 6,335,263).

With regard to claim 3, Johansen shows a protection device as described above but does not show that the shunt provides a limited resistance of less than about 0.1 ohms between the electrical contacts when the shunt is in its first position.

However, Johansen shows that the shunt 50 and the ground 60 are both made of metal (Column 5, lines 19-21 and 42-43), the shunt can be manually moved in and out manually (Abstract, last line). Cheung et al shows that metal contact resistance having a specific contact resistance of no larger than $\rho = 10^{-7}$ Ohm- cm² (Column 4, lines 66-67).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to find that the shunt provides a limited resistance of less than about 0.1 ohms between the electrical contacts when the shunt is in its first position. The rationale is as follows: as disclosed in Johansen that the contact is a metal contact. Furthermore, since the shunt can be manually operated, the smallest width of the contact is at least about 0.1 mm, therefore, the contact area would be no less than $S = 0.01 \text{ mm}^2 = 10^{-4} \text{ cm}^2$. The contact resistance is $R = \rho X S = 0.001 \text{ Ohm}$, which is less than about 0.1 Ohm.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen in view of Combe (US 6,301,087).

With regard to claim 4, Johansen shows a protection device as described above and further shows that the device needs to be able to protect against electrostatic

Art Unit: 2652

discharge of a few of volts (Column 2, lines 29-32), but does not show it is between about 2 and 5 volts.

Combe shows a device for protect magnetic head in a disk device from electrostatic discharge in the range of two-three volts.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to set the protect device to protect against electrostatic discharge between about 2 to 3 volts. The rationale is as follows: Johansen teaches the protecting range is a few of volts, Combe has specified it in the range of 2-3 volts. One of ordinary skill in the art would have been motivated to find that the "a few volts" could be 2-3 volts, which is in the range of "between 2 to 5 volts."

Allowable Subject Matter

5. Claims 5, 6, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claims 5 and 6, Johansen (US 5,963,415) shows a electrostatic discharge protection device having a shunt, which can be reversibly moved between the first (shunted) position and second (unshunted) position, but fails to show a deshunting rail that is configured to accept and support a portion of the pair of electrical contacts when the shunt is in its second position and to lift the pair of electrical contacts so that electrical communication between the shunt and the circuit is broken.

With regard to claim 20, Johansen (US 5,963,415) shows an electrostatic discharge protection device having a deshunting pin, but fail to show a deshunting rail.

Art Unit: 2652

Applicant's rail can be moved manually or moved by a mechanical testing apparatus between the shunted and unshunted positions (Specification, p. 7, lines 13-15).

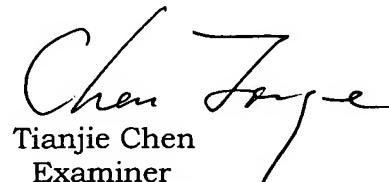
Conclusion

6. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-6037 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.



Tianjie Chen
Examiner
Art Unit 2652

April 2, 2003